

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 15-25 have been cancelled.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-14 and 26-50 are now pending in this application.

Priority under 35 U.S.C. § 119

The Office Action does not acknowledge receipt of the copies of the priority documents in the parent application. Applicants request acknowledgment of receipt of the priority documents.

Double Patenting

Claims 1-25, 37, and 38 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,787,491. The Office argues that “[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter sought is fully encompassed by the claimed subject matter of US 6,797,491.” See Office Action at page 2. This rejection is respectfully traversed.

Claim 1 recites a woven composite fabric comprising metal elements and polymer elements “wherein said metal elements have a diameter greater than approximately 40 μm .” Claims 2-14 depend upon claim 1. Claims 15-25 have been cancelled. Claims 37 and 38 depend upon claim 26, which has not been rejected on this ground. Therefore, Applicant

believes that claims 37 and 38 should not have been rejected under the grounds of obviousness-type double patenting because claim 26 was not also rejected.

Claims 1-14 of U.S. 6,787,491 do not recite that metal elements have such a diameter. Therefore, the subject matter of claim 1 is not “fully encompassed” by the claims of U.S. 6,787,491. Furthermore, it would not have been obvious to one of ordinary skill to modify the fabric recited by U.S. 6,787,491 to provide the woven composite fabric of claim 1. When considering those portions of the specification of U.S. 6,787,491 that support the claims, one of ordinary skill in the art would not have determined that claims 1-14 of U.S. 6,787,491 recite obvious variations of claim 1. *See In re Vogel*, 422 F.2d 438, 441-42 (CCPA 1970). Nor would one of ordinary skill have had motivation to make such a modification. Withdrawal of this rejection is respectfully traversed.

Rejection under 35 U.S.C. § 102/103

Claims 15-19 and 21-24 are rejected under 35 U.S.C. § 102(b) as anticipated by, or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,071,699 (hereafter “Pappas et al.”). Claims 15-25 have been cancelled. Withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 103

Claims 26-30, 32-36, 38-43, and 45-49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pappas et al. This rejection is respectfully traversed.

Claim 26 recites a woven composite fabric that comprises metal elements and polymer elements, said metal elements comprising at least one of metal wires, bundles of metal wires, metal strands and metal cords, wherein said polymer elements are polymer tapes, and wherein said metal elements are separated by a distance not greater than approximately 10 mm.

Pappas et al. discloses a fabric that includes warp yarns 21, weft yarns 22, and conductive fibers 23 interwoven with the warp threads. See Pappas et al. at col. 3, lines 37-42. However, Pappas et al. does not disclose or suggest a fabric “wherein said polymer

elements are polymer tapes, and wherein said metal elements are separated by a distance not greater than approximately 10 mm.” Pappas et al. discloses a spacing of conductive fibers of one fiber per 0.5 to 2 inches of fabric width or length, with one fiber per inch being most preferred. These measurements convert to distances of 12.7 to 50.8 mm, with a preferable spacing of 25.4 mm. Therefore, Pappas et al. discloses a spacing that is greater than that claimed by the Applicant.

The Office states that it would have been obvious to optimize the spacing disclosed by Pappas et al. to produce the fabric recited in claim 26. However, the Office does not provide a motivation as to why one of ordinary skill would modify the spacing dimensions disclosed by Pappas et al.

Pappas et al. discloses that the conductive fibers 23 “may be any conductive staple fiber such as stainless steel or copper, as disclosed in U.S. Pat. No. 4,431,316.” (emphasis added) See Pappas et al. at col. 4, lines 5-7. U.S. Patent No. 4,431,316 discusses metal staple fibers and their usefulness in antistatic discharge applications in col. 2, lines 39-43. The attached Exhibit A is a copy of “Terminology of man-made fibres” for The International Bureau for the Standardization of Man-Made Fibres. According to the definition of “staple fiber” provided in chapter 3, page 42, a staple fiber is a fiber with a limited length that is spinnable into a yarn. To determine the definition of “wire,” one must consult the definition of “steel filament,” according to page 47. Page 43 defines “steel filament” as a fibre used as an individual element in a strand or cord, while page 32 defines “filament” as a fibre of very great length, which is considered continuous.

One of ordinary skill in the art would not have considered staple fibers with a limited length to be alternatives to “metal wires, bundles of metal wires, metal strands and metal cords,” as recited in claim 26, because one of ordinary skill would understand fibers with a limited length to be different from filaments of very great lengths. Therefore, it would not have been obvious to modify the teachings of Pappas et al. to produce the fabric of claim 26.

Furthermore, Pappas et al. teaches preparation of fabrics by using the method disclosed in U.S. Patent No. 4,362,199. See Pappas et al. at col. 3, lines 54-62. U.S. Patent

No. 4,362,199 teaches the addition of yarns from natural, semi-synthetic, and synthetic polymers to reinforce a fabric. See U.S. Patent No. 4,362,199 at col. 7, lines 27-31.

Therefore, it would not have been obvious to decrease the spacing between conductive fibers 23 by adding additional conductive fibers because Pappas et al. discloses reinforcement of fabrics by adding additional non-conductive fibers.

Claim 39 recites a woven composite fabric that comprises metal elements and polymer elements, said metal elements comprising at least one of metal wires, bundles of metal wires, metal strands and metal cords, wherein said polymer elements are polymer tapes, and wherein a number of said metal elements present in one of a warp and a weft direction is not less than approximately one-third a number of said polymer elements present in said one of a warp and a weft direction.

Pappas et al. is silent in regard to the relationship between number of metal elements in the warp or weft direction and the number of polymer elements in the warp or weft direction. In the first example disclosed by Pappas et al., 10-12 yarn ends, or polymer strips, are used per linear inch of fabric, while conductive fibers are interwoven with a spacing of one fiber per inch of fabric. See Pappas et al. at col. 5, lines 66-68; col. 6, lines 1-3. In other words, Pappas et al. discloses a fabric in which the number of metal elements is significantly lower than one third of the number of polymer elements. Therefore, it would not have been obvious to modify the teachings of Pappas et al. to produce the fabric of claim 39.

The Office states that it would have been obvious to optimize the relationship between number of metal elements in the warp or weft direction and the number of polymer elements in the warp or weft direction because this relates to the conductivity of the fabric. See Office Action at page 5. However, the prior art does not recognize such a relationship as a result-effective variable. A parameter must first be recognized as a result-effective variable before the determination of the optimal or workable ranges of the variable can be characterized as routine experimentation. See M.P.E.P. § 2144.05, part IIB. It would not have been obvious to optimize the relationship between number of metal elements in the warp or weft direction and the number of polymer elements in the warp or weft direction because the Pappas et al. fails to recognize this relationship as a result-effective variable.

Furthermore, it would not have been obvious to modify the teachings of Pappas et al. to make the fabric of claim 39 because of the differences between staple fibers and filaments, as noted above.

For at least the reasons noted above, withdrawal of this rejection is respectfully requested.

Allowable Subject Matter

Applicant wishes to thank the Office for indicating that claims 31, 37, 44, and 50 contain allowable subject matter. Applicant submits that claims 1-14 contain allowable subject matter because claims 1-14 have not been rejected with prior art. Applicant further submits that all pending claims are in condition for allowance for at least the reasons noted above. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 8/3/06

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 672-5426
Facsimile: (202) 672-5399

By 

Glenn Law
Attorney for Applicant
Registration No. 34,371